EMET

Courses

EMET 140 Electro-Mechanical Engineering Technology Foundations
2 Credits. 1 Lecture Hour. 2 Lab Hours.
An introduction to project-based learning, safety, and professional practices for electro-mechanical and power systems projects. Students who pass the course receive an OSHA 10-hour certificate.
Prerequisites: None

EMET 150 Introduction to Controls and Robotics
2 Credits. 1 Lecture Hour. 2 Lab Hours.
An introduction to the operation and usage of robots in manufacturing applications. Topics include: programmable robotics, flow charting, logic controllers, motors, control language, motion, and quality assurance.
Prerequisites: AFL 085, and AFM 095 or MAT 120, or appropriate placement test scores

EMET 180 Process Instrumentation
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course on process instrumentation theory and applications. Topics include: principles and practices of measurement and control of temperature, pressure, flow, level, and analytical quantities; and data acquisition for process instruments and controls.
Prerequisites: EMET 140, EET 131

EMET 191 Part-Time Cooperative Education 1: Electro-Mechanical Engineering Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their first part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: None

EMET 192 Part-Time Cooperative Education 2: Electro-Mechanical Engineering Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their second part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: EMET 191

EMET 193 Part-Time Cooperative Education 3: Electro-Mechanical Engineering Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their third part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: EMET 192

EMET 194 Part-Time Cooperative Education 4: Electro-Mechanical Engineering Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their fourth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: EMET 193

EMET 195 Part-Time Cooperative Education 5: Electro-Mechanical Engineering Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their fifth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: EMET 194

EMET 196 Part-Time Cooperative Education 6: Electro-Mechanical Engineering Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their sixth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: EMET 195

EMET 198 First Year Special Topics in Electro-Mechanical Engineering Technology
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A course on selected topics related to Electro-Mechanical Engineering Technology, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.
Prerequisites: Instructor Approval

EMET 199 First Year Independent Project in Electro-Mechanical Engineering Technology
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A project related to Electro-Mechanical Engineering Technology that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Electro-Mechanical Engineering Technology faculty. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: Instructor Approval

EMET 210 Energy Efficiency and Audits
3 Credits. 2 Lecture Hours. 2 Lab Hours.
A course on concepts related to energy consumption. Topics include: conducting energy audits for residential, commercial and industrial locations; conserving energy; reducing energy consumption; and applying renewable energies.
Prerequisites: None

EMET 220 Photovoltaic and Solar Thermal Devices
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course on planning, installing, and maintaining solar energy devices. Topics include: photovoltaic electrical systems, passive and thermal solar systems, and geothermal systems.
Prerequisites: EMET 210

EMET 225 Solar and Renewable Energy
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A course on planning, installing, and maintaining solar and renewable energy devices. Topics include: photovoltaic electrical systems, solar thermal systems, fuel cell technology, and wind turbine technology.
Prerequisites: EMET 210

EMET 230 Fuel Cells and Wind Devices
3 Credits. 2 Lecture Hours. 2 Lab Hours.
A course on planning, installing, and maintaining alternative energy sources. Topics include: converting chemical energy to electricity; fuel cell components, power efficiencies, and applications; electrolysis; and wind turbine components.
Prerequisites: EMET 210

EMET 240 Programmable Logic Controllers, Motors, Motor Controls, and Kinematics
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course on programmable logic controllers, motors, and variable speed drives and mechanisms. Topics include: operating, troubleshooting and controlling circuits; calculating speed, torque, horsepower, and efficiency; and machine kinematics.
Prerequisites: EET 132

EMET 245 Laser Foundations and Safety
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course on the operational theory and safe use of lasers. Topics include: properties of laser light, elements of the laser, laser classifications, structure of the eye, and hazards associated with laser light.
Prerequisites: MAT 121 or appropriate placement test score EMET 140

EMET 250 Servomechanisms
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course on negative feedback for closed-loop servo systems. Topics include: transducers for sensing system parameters; proportional, proportional-derivative, and proportional-integral-derivative positional control systems; computer control of servo-control systems; and simple closed-loop controls.
Prerequisites: EET 132, EMET 140

EMET 255 Optical Components, and Geometrical and Wave Optics
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A course on optical elements used in photonics applications. Topics include: lens, mirrors, prisms, laser modulators and Q-switches, optical power, and energy measurements.
Prerequisites: EMET 245

EMET 260 Robotics
3 Credits. 2 Lecture Hours. 2 Lab Hours.
A course on robotics and factory automation. Topics include: analyzing industrial robotics applications in automated manufacturing environments, evaluating mechanical and electrical components, programming and operating robots, choosing robots for industrial applications, and applying quality assurance techniques.
Prerequisites: EET 132, EMET 140

EMET 265 Industrial Laser Systems
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A course on lasers used in industry. Topics include: types of industrial lasers; applying lasers for cutting, welding, drilling, and heat treating; and motion control.
Prerequisites: EMET 245

EMET 270 Robotics and Servomechanisms
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A course on theory and applications of robotics and servomechanisms. Topics include: analyzing industrial robotics applications in automated manufacturing environments; programming and operating robots; transducers, proportional, proportional-integral, and proportional-integral-derivative positional control systems; and closed- loop controls.
Prerequisites: EET 132

EMET 285 Electro-Mechanical Engineering Technology Capstone 1
1 Credit. 0 Lecture Hour. 2 Lab Hours.
Students participate in a team design project. Topics include: design concepts, modeling, detail and assembly drawings, bill of materials, vendors, and costs of project design.
Prerequisites: EMET 140, EET 132

EMET 290 Electro-Mechanical Engineering Technology Capstone 2
2 Credits. 1 Lecture Hour. 2 Lab Hours.
A continuation of EMET 285. Students participate in the manufacturing, assembly, and testing of their product design, and prepare a presentation about the complete design process.
Prerequisites: EMET 285

EMET 291 Full-Time Cooperative Education 1: Electro-Mechanical Engineering Technology
2 Credits. 1 Lecture Hour. 40 Lab Hours.
Students seeking an associate's degree participate in their first full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: None

EMET 292 Full-Time Cooperative Education 2: Electro-Mechanical Engineering Technology
2 Credits. 1 Lecture Hour. 40 Lab Hours.
Students seeking an associate's degree participate in their second full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: EMET 291

EMET 293 Full-Time Cooperative Education 3: Electro-Mechanical Engineering Technology
2 Credits. 1 Lecture Hour. 40 Lab Hours.
Students seeking an associate's degree participate in their third full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: EMET 292

EMET 294 Internship 1: Electro-Mechanical Engineering Technology
2 Credits. 1 Lecture Hour. 40 Lab Hours.
Students seeking an associate's degree participate in their first unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: EMET 140

EMET 295 Internship 2: Electro-Mechanical Engineering Technology
2 Credits. 1 Lecture Hour. 40 Lab Hours.
Students seeking an associate's degree participate in their second unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: EMET 294

EMET 298 Second Year Special Topics in Electro-Mechanical Engineering Technology
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A course on selected topics related to Electro-Mechanical Engineering Technology, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.
Prerequisites: Instructor Approval

EMET 299 Second Year Independent Project in Electro-Mechanical Engineering Technology
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A project related to Electro-Mechanical Engineering Technology that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Electro-Mechanical Engineering Technology faculty. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: Instructor Approval